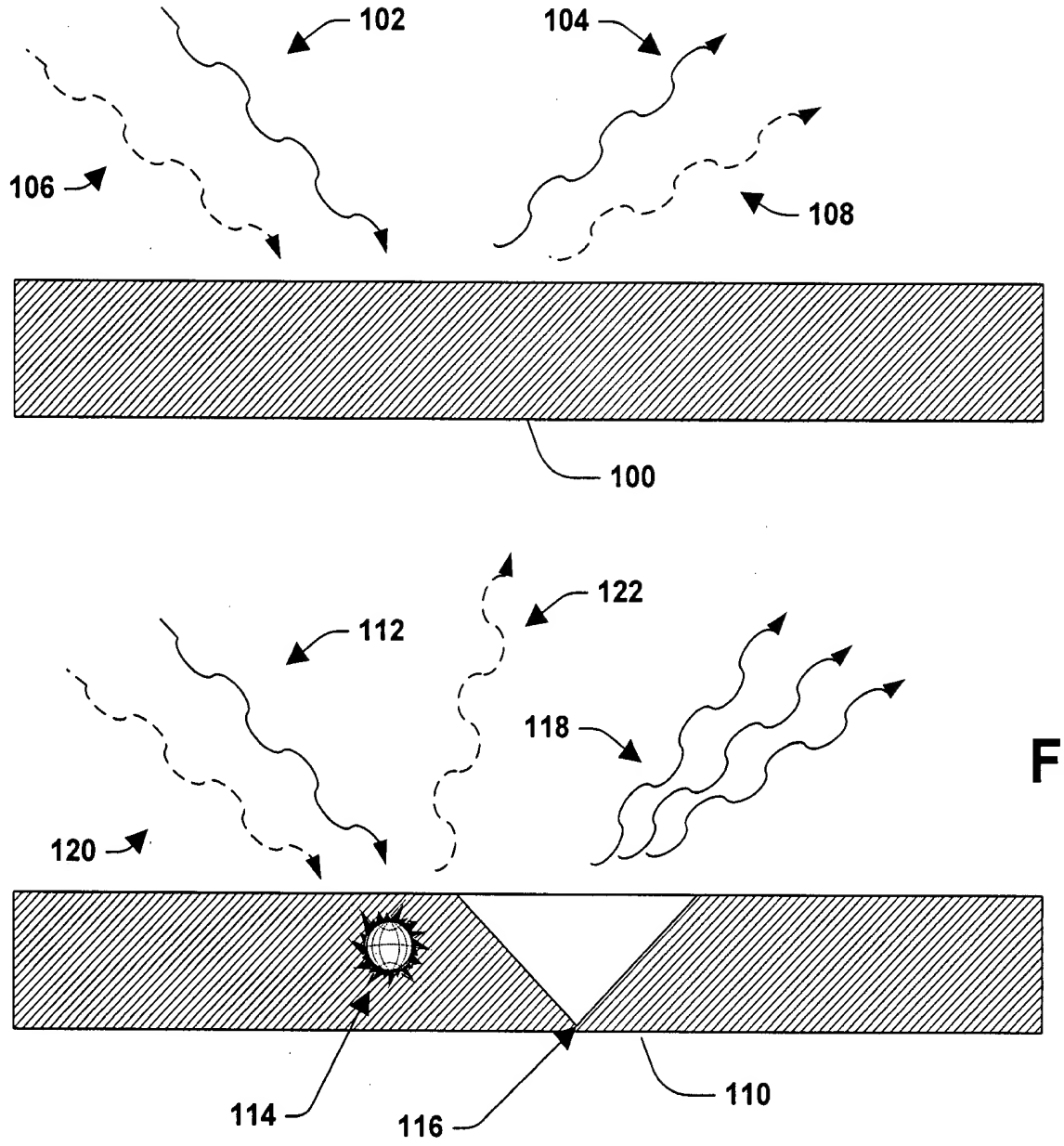


Fig. 1

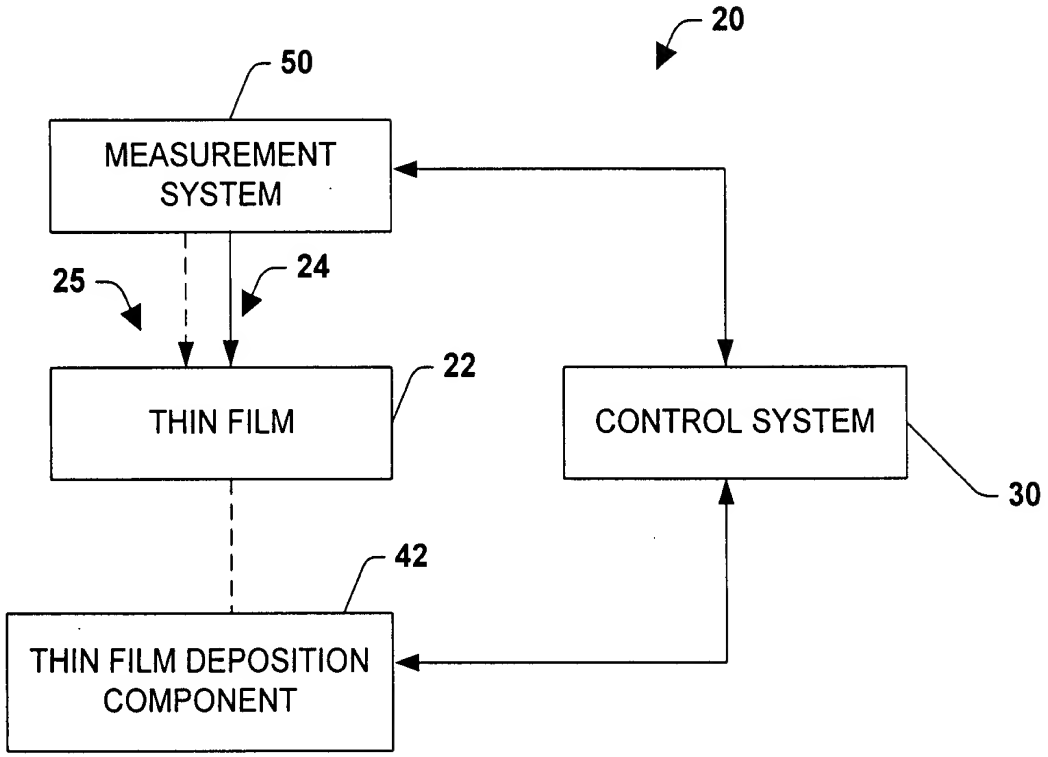


Fig. 2

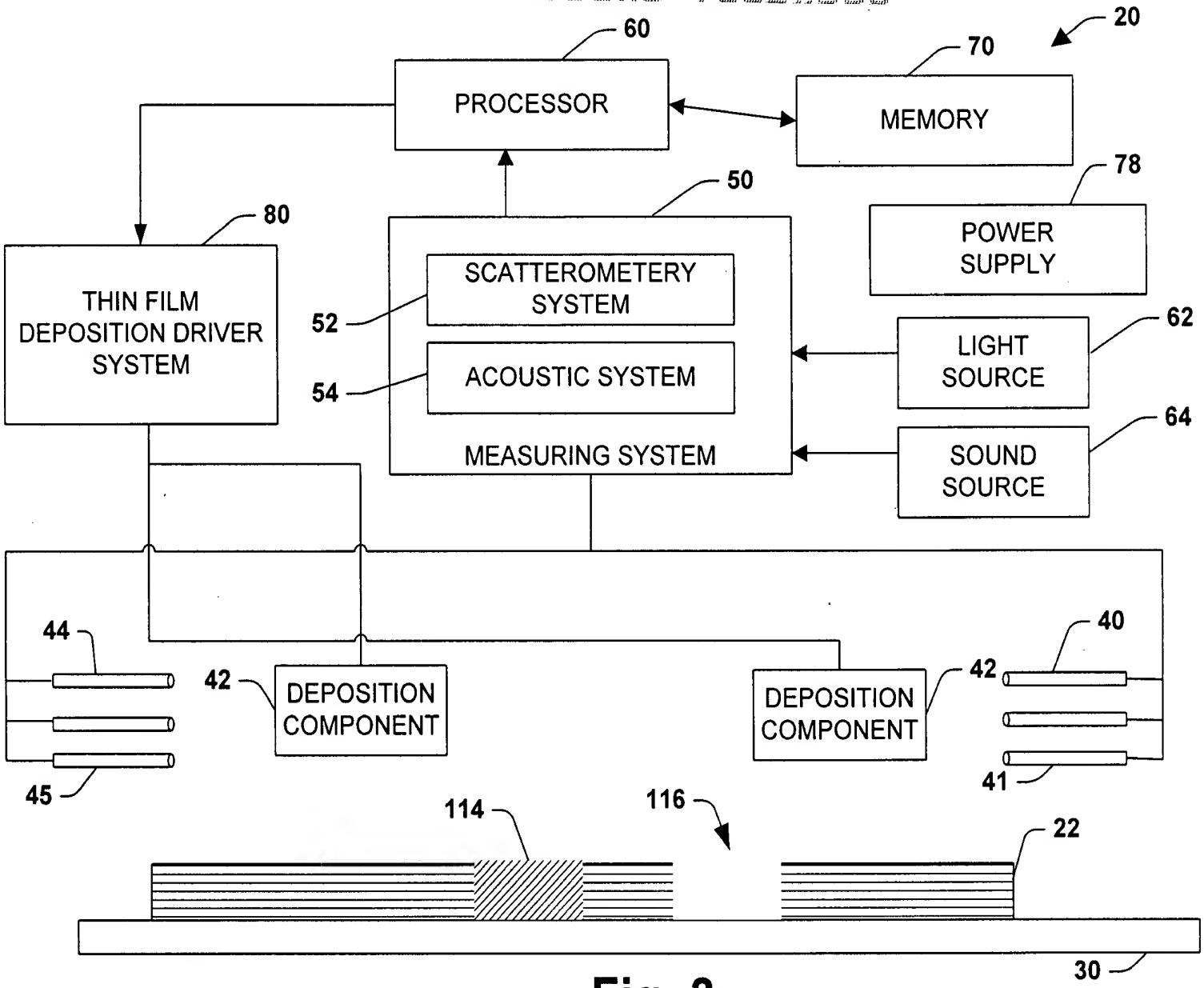

20
60
PROCESSOR
70
MEMORY
78
POWER SUPPLY
50
80
THIN FILM DEPOSITION DRIVER SYSTEM
52
SCATTEROMETERY SYSTEM
54
ACOUSTIC SYSTEM
MEASURING SYSTEM
62
LIGHT SOURCE
64
SOUND SOURCE
44
42
DEPOSITION COMPONENT
DEPOSITION COMPONENT
42
40
45
41
114
116
22
30

Fig. 3

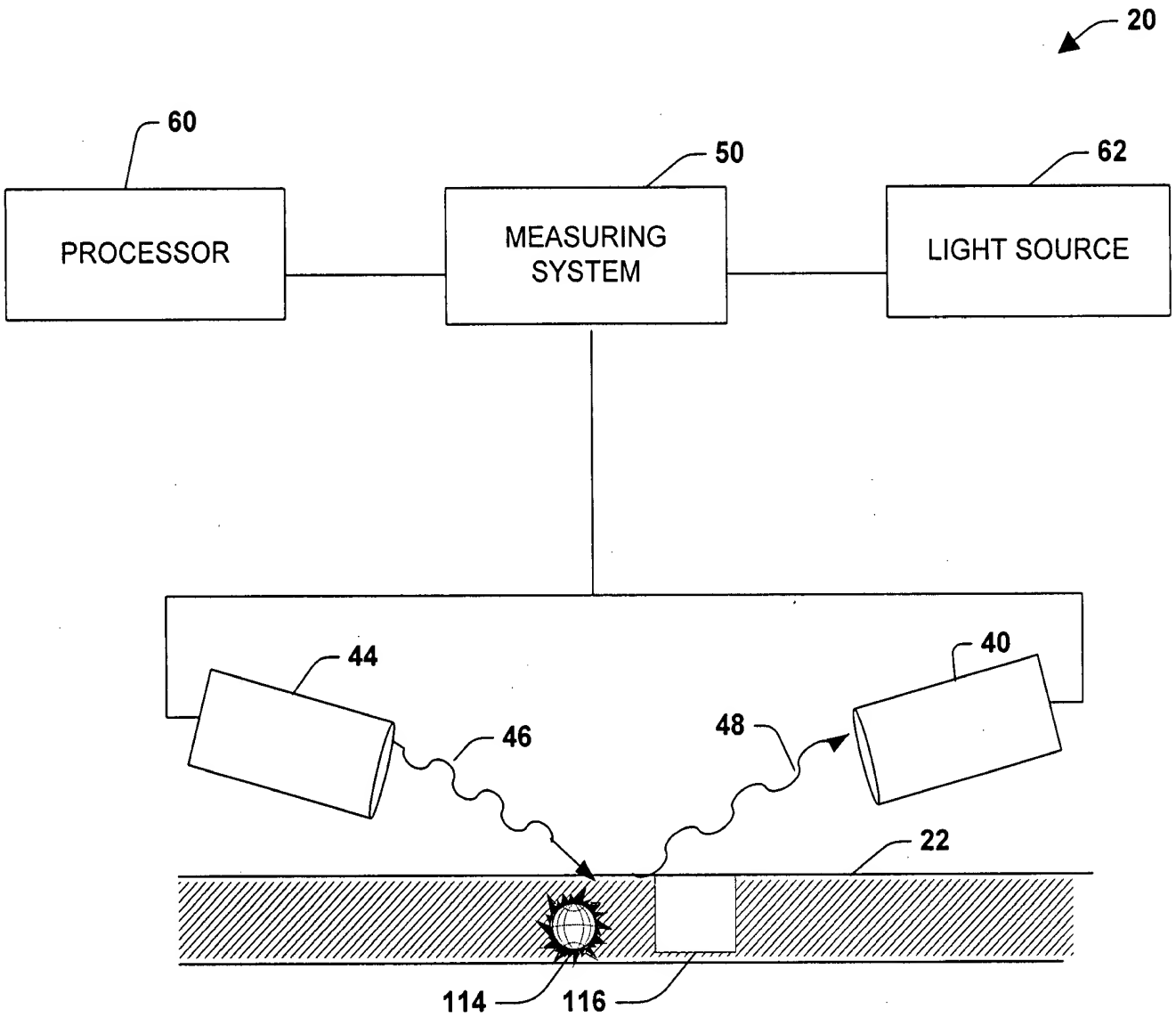


Fig. 4

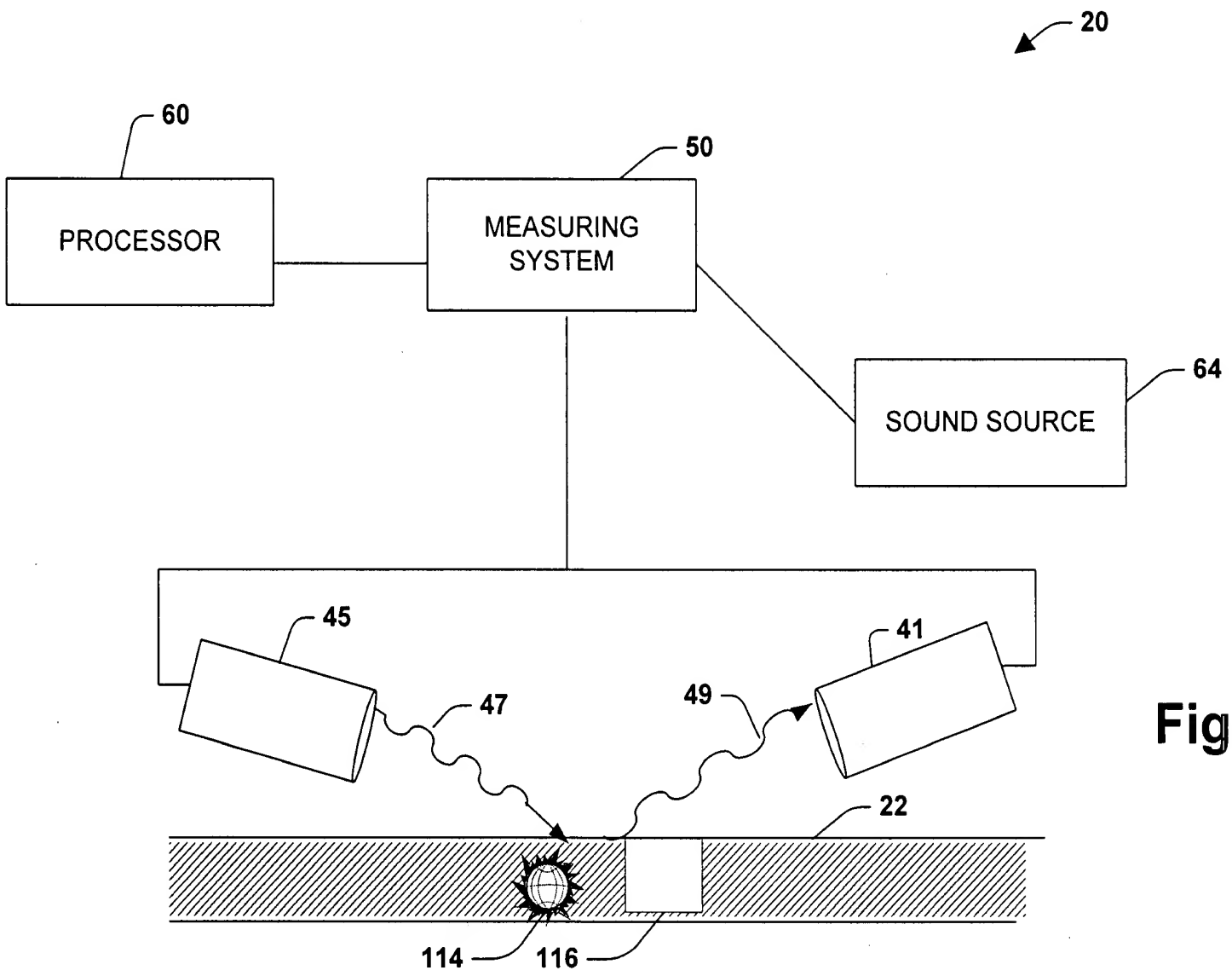

20
60
PROCESSOR
50
MEASURING SYSTEM
64
SOUND SOURCE
45
41
47
49
22
114
116

Fig. 5

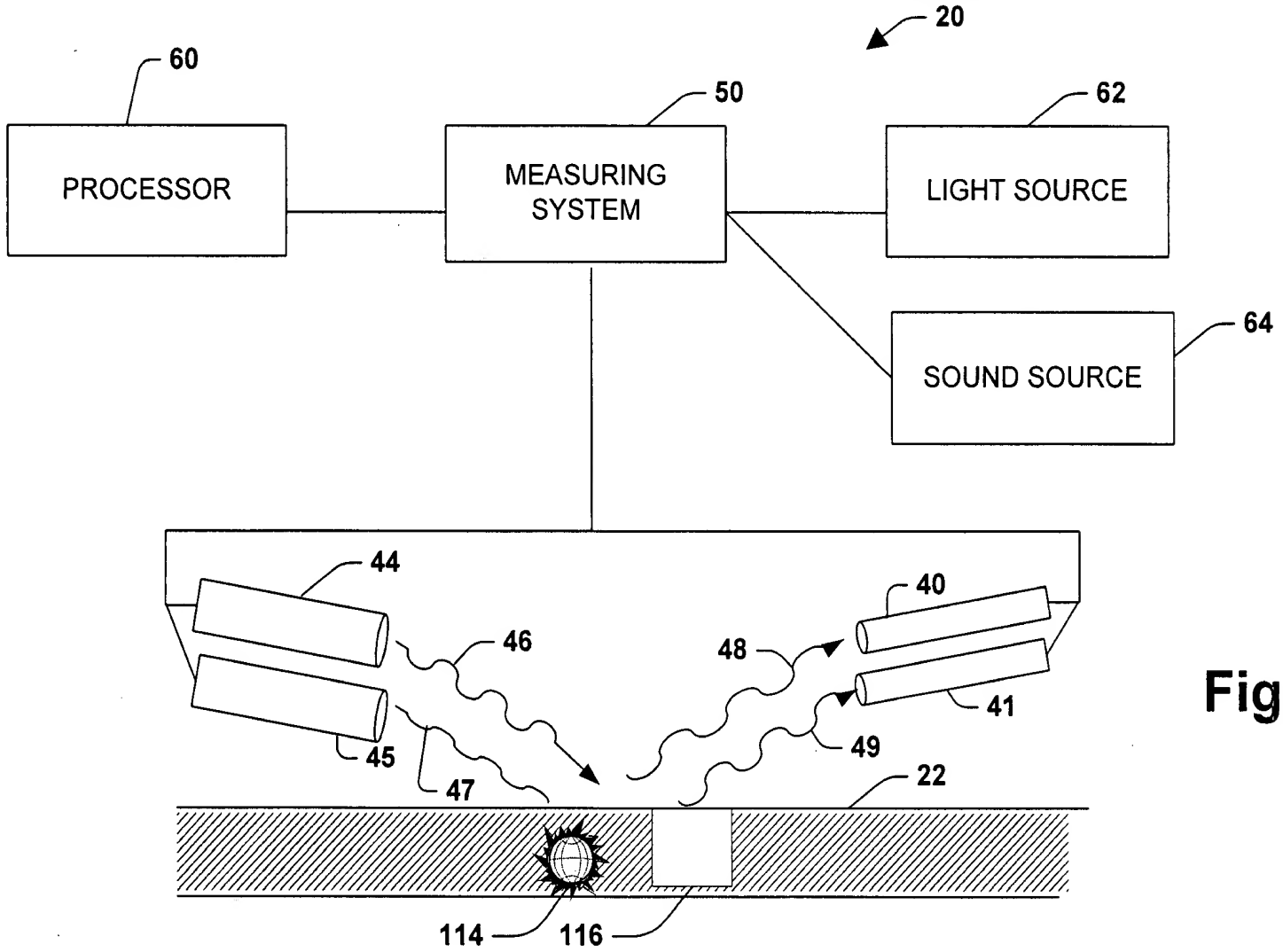

20
60
PROCESSOR
50
MEASURING SYSTEM
62
LIGHT SOURCE
64
SOUND SOURCE
44
46
40
48
41
45
47
49
22
114
116

Fig. 6

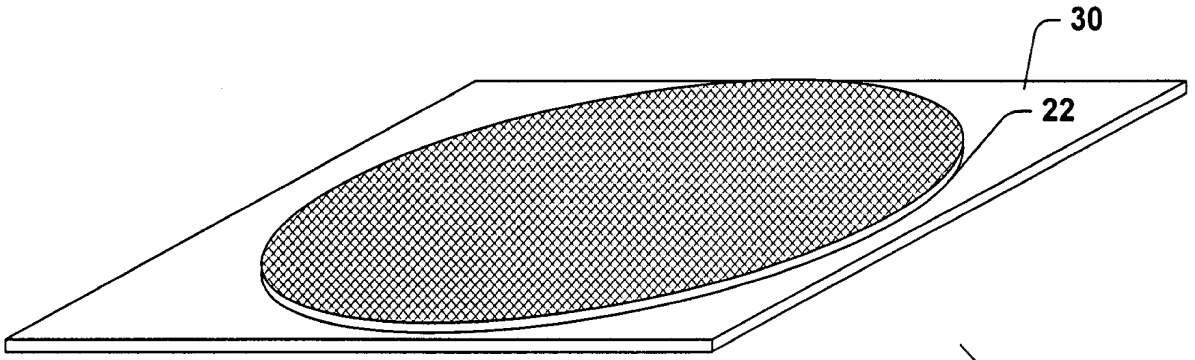


Fig. 7

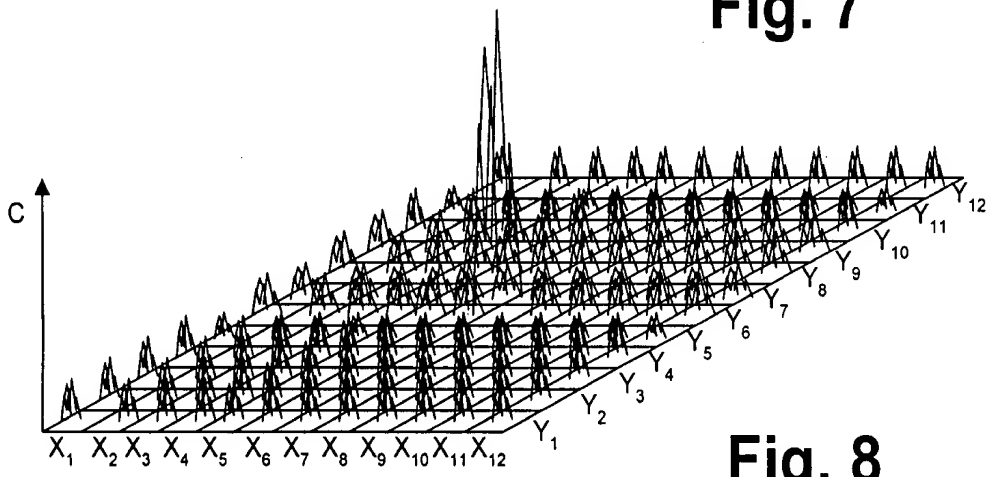


Fig. 8

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}
Y_1	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_2	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_3	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_4	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_5	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_6	T_A	T_A	T_A	T_A	T_A	T_A	T_U	T_A	T_A	T_A	T_A	T_A
Y_7	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_8	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_9	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_{10}	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_{11}	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A
Y_{12}	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A	T_A

Fig. 9

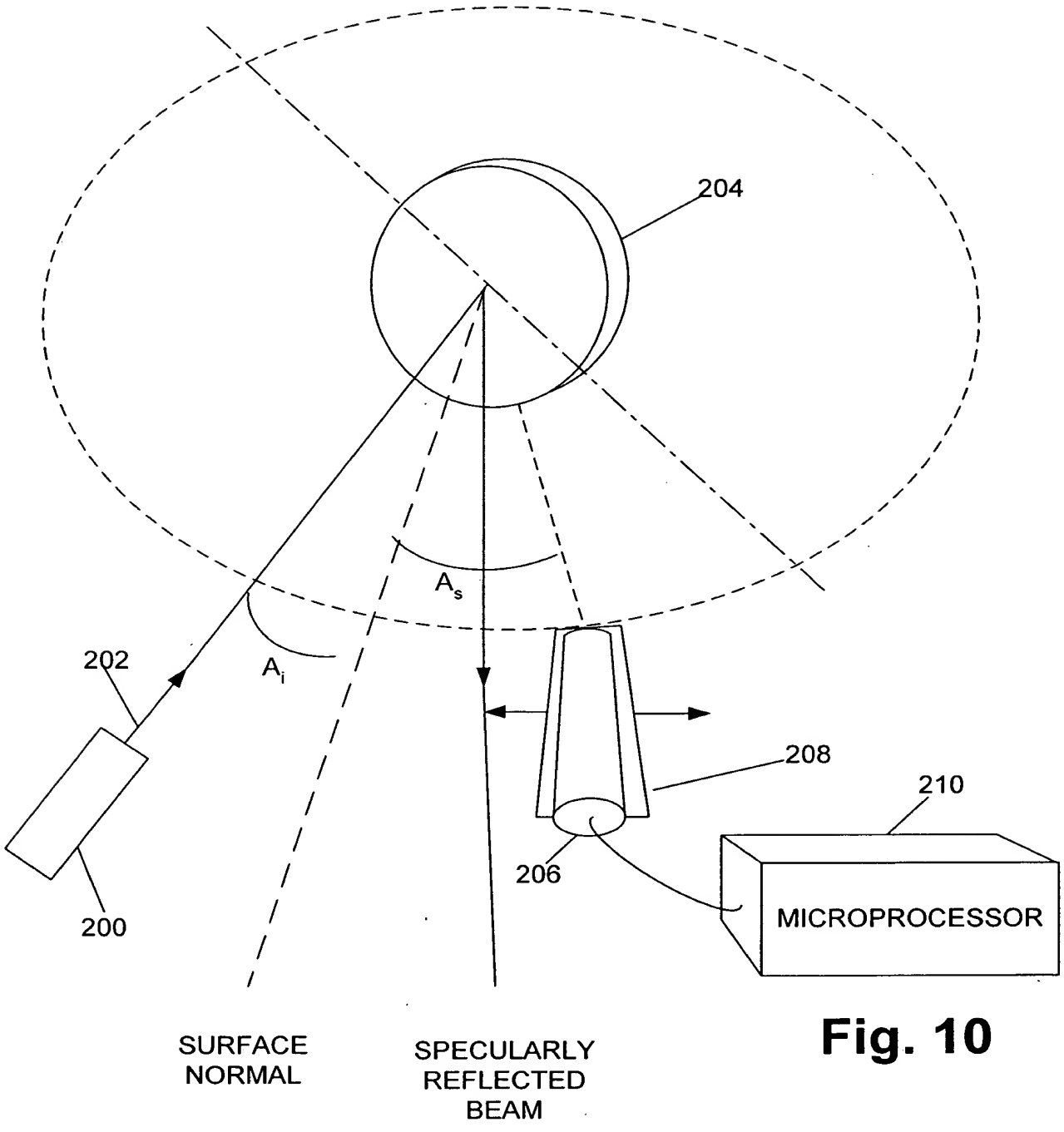

204
A_s
202
A_i
208
210
206
MICROPROCESSOR
200
SURFACE NORMAL
SPECULARLY REFLECTED BEAM

Fig. 10

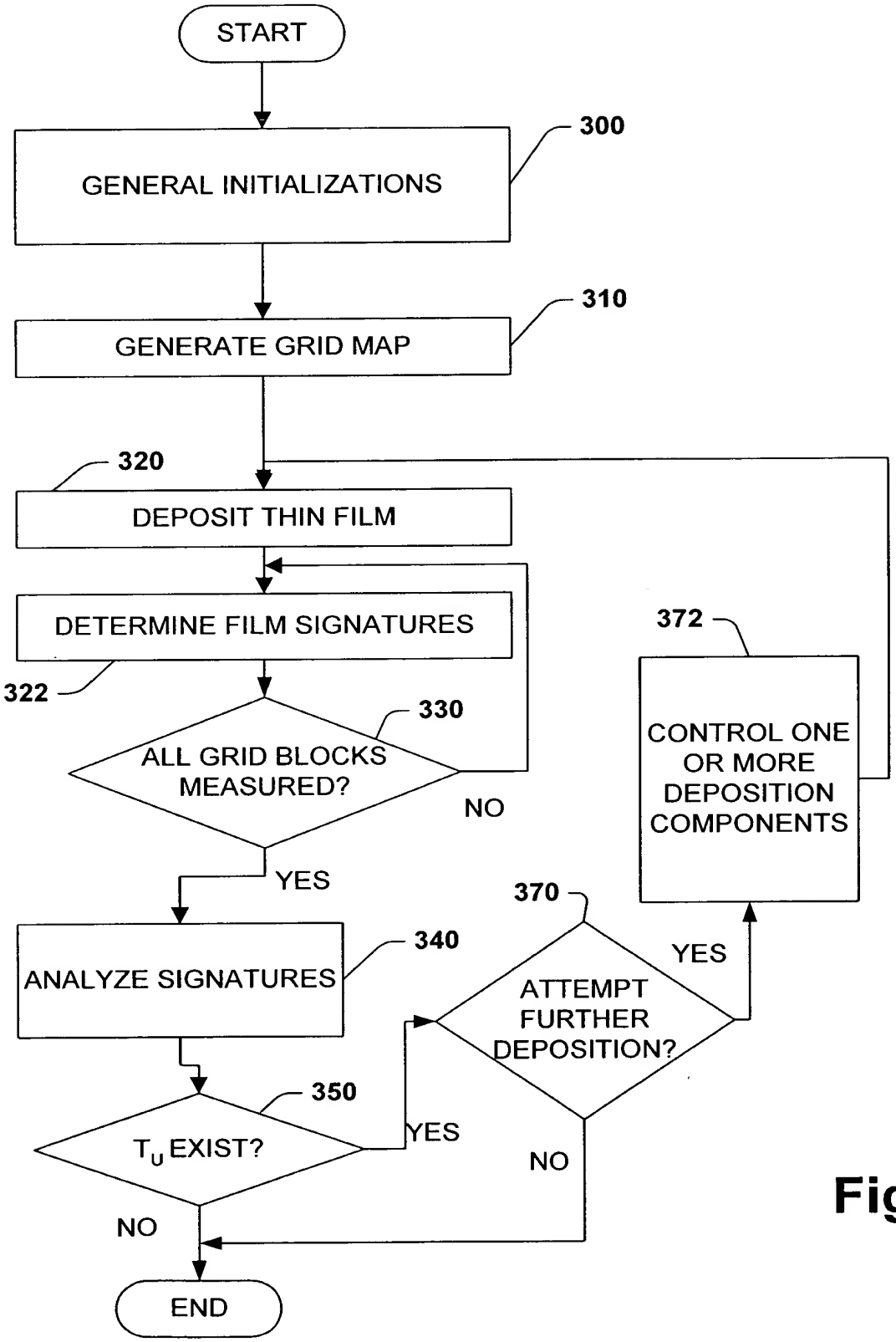

START
GENERAL INITIALIZATIONS
300
GENERATE GRID MAP
310
320
DEPOSIT THIN FILM
DETERMINE FILM SIGNATURES
322
330
ALL GRID BLOCKS MEASURED?
NO
YES
372
CONTROL ONE OR MORE DEPOSITION COMPONENTS
370
YES
ATTEMPT FURTHER DEPOSITION?
ANALYZE SIGNATURES
340
350
T_U EXIST?
YES
NO
NO
END

Fig. 11

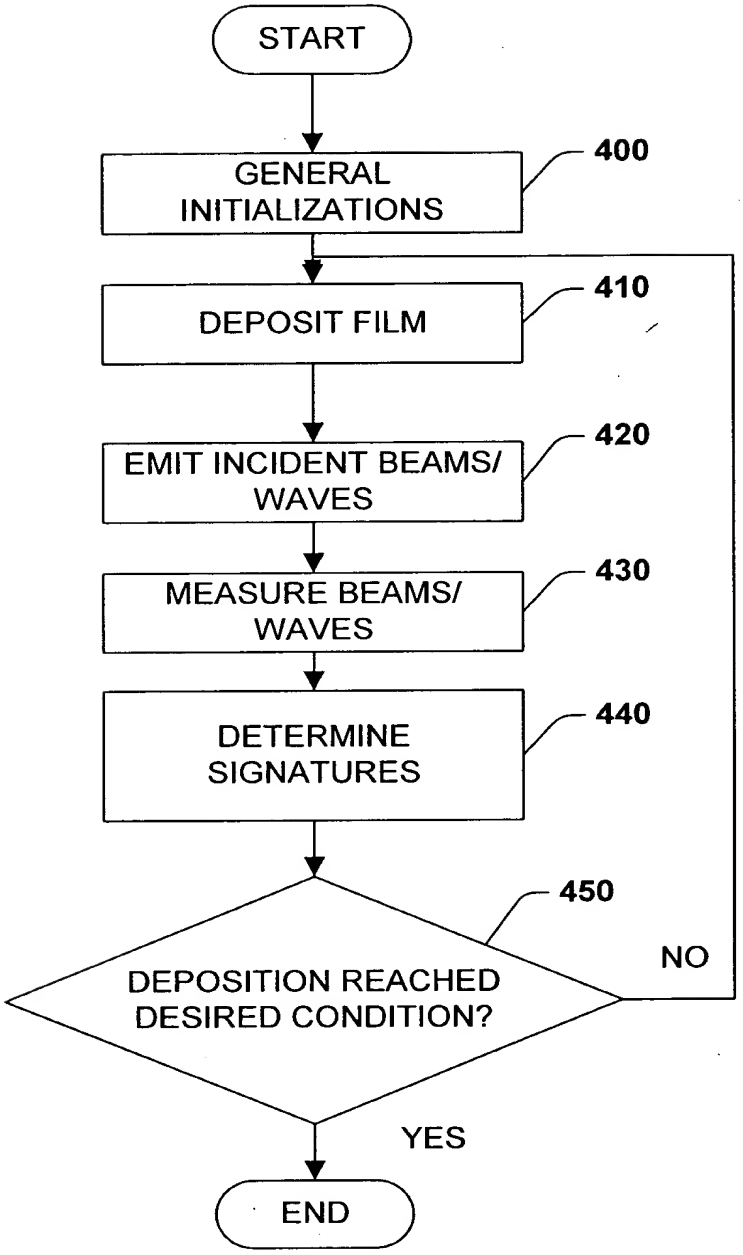

START
GENERAL INITIALIZATIONS
400
DEPOSIT FILM
410
EMIT INCIDENT BEAMS/ WAVES
420
MEASURE BEAMS/ WAVES
430
DETERMINE SIGNATURES
440
DEPOSITION REACHED DESIRED CONDITION?
450
NO
YES
END

Fig. 12

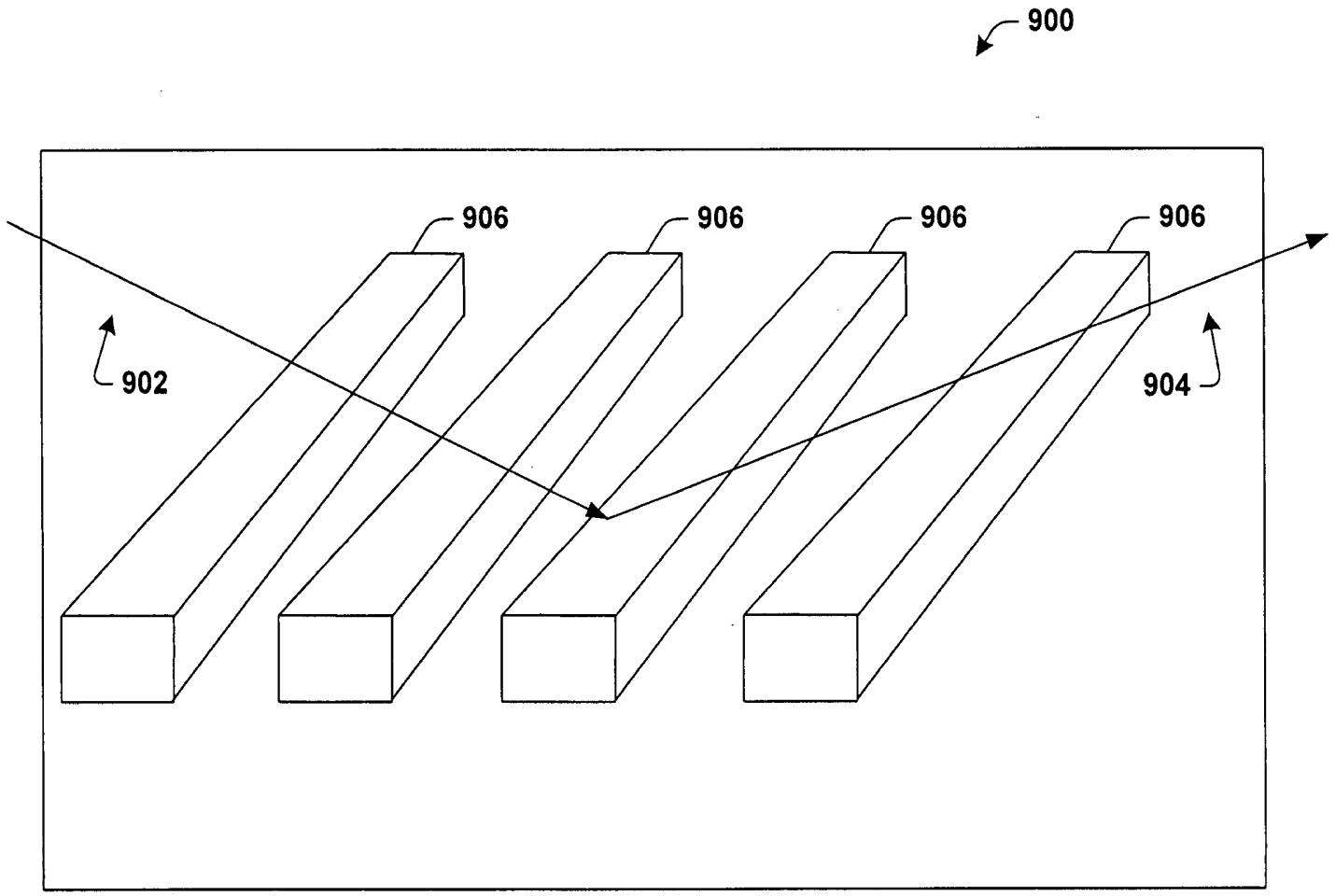


FIG. 13

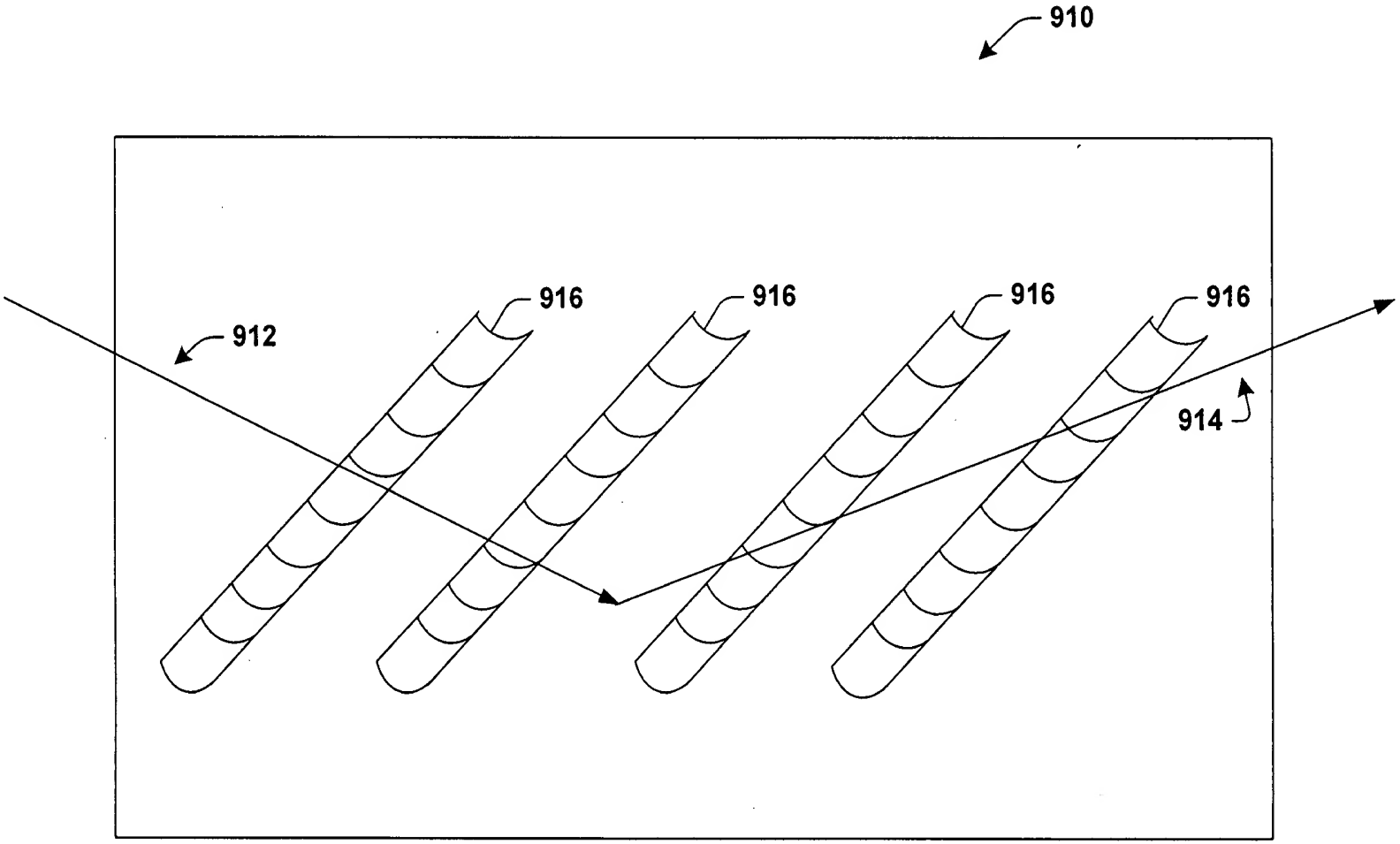


FIG. 14

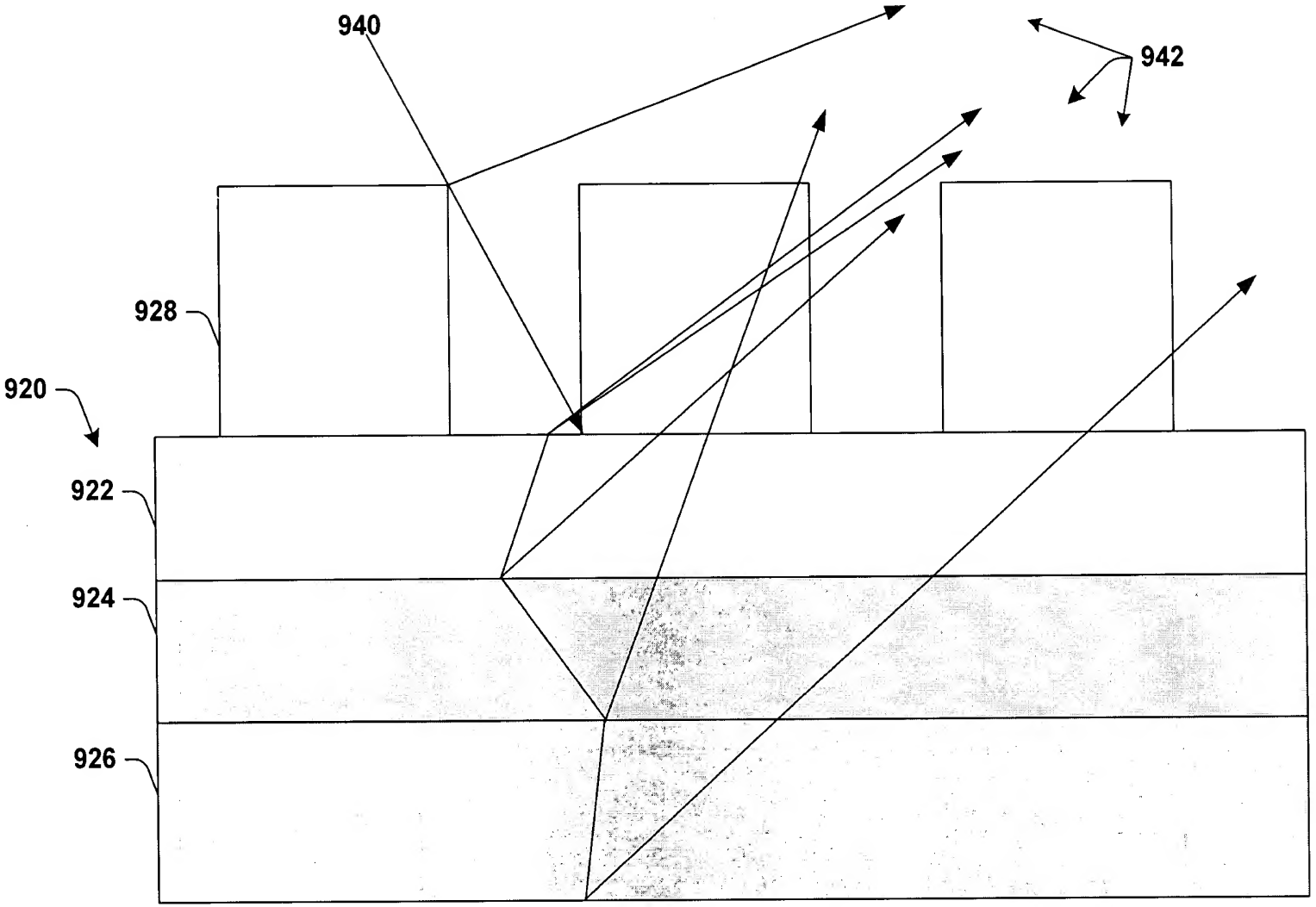


FIG. 15

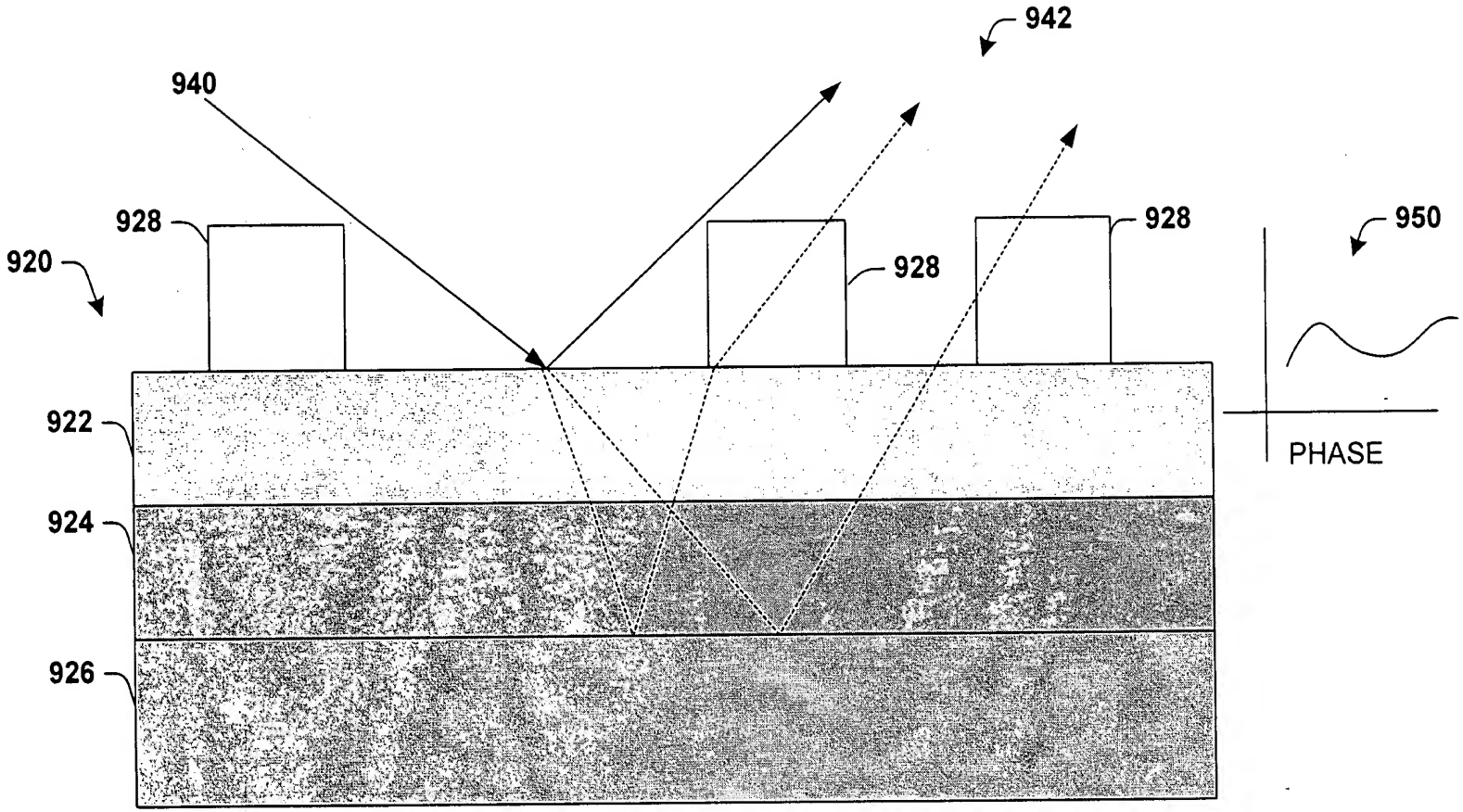


FIG. 16

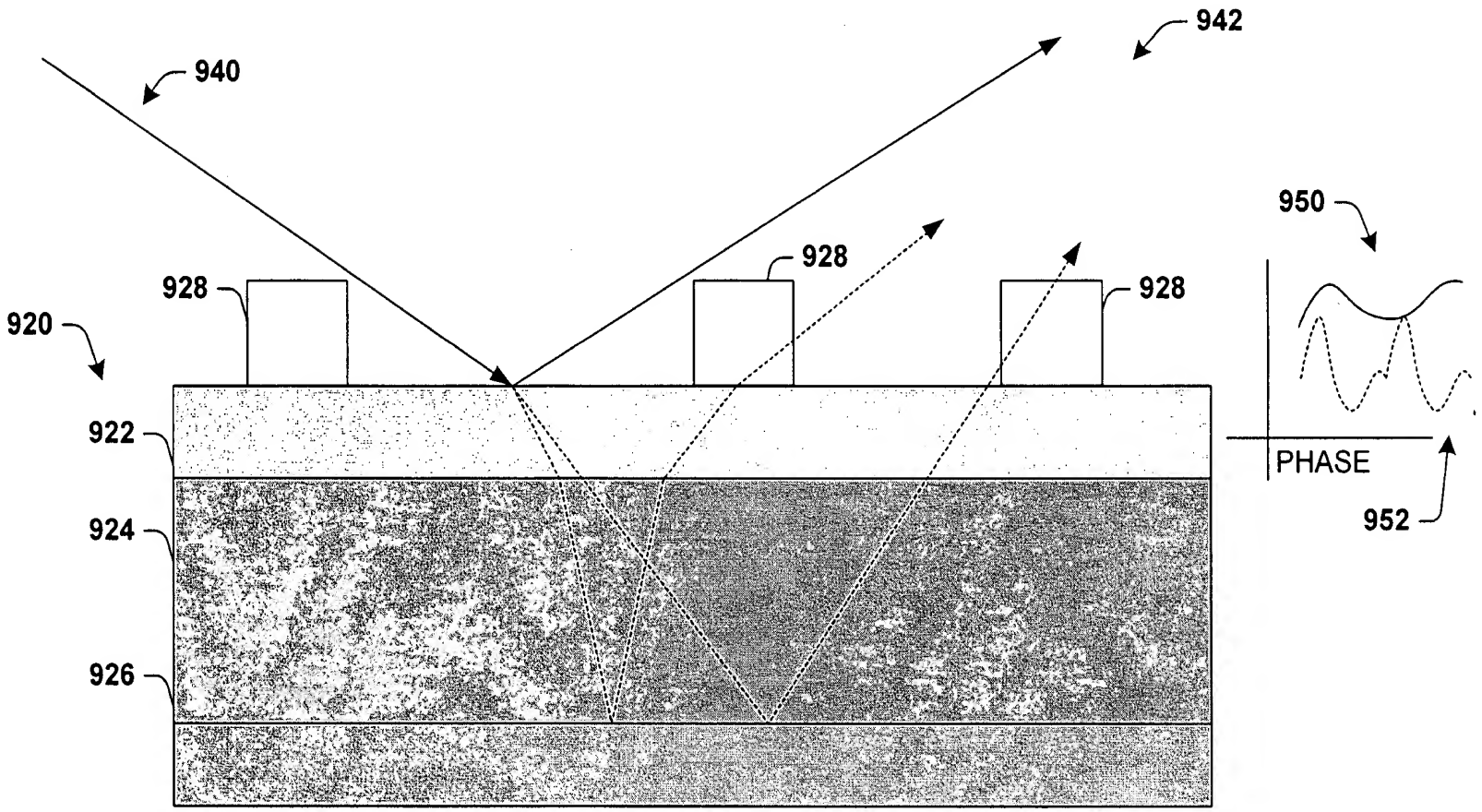
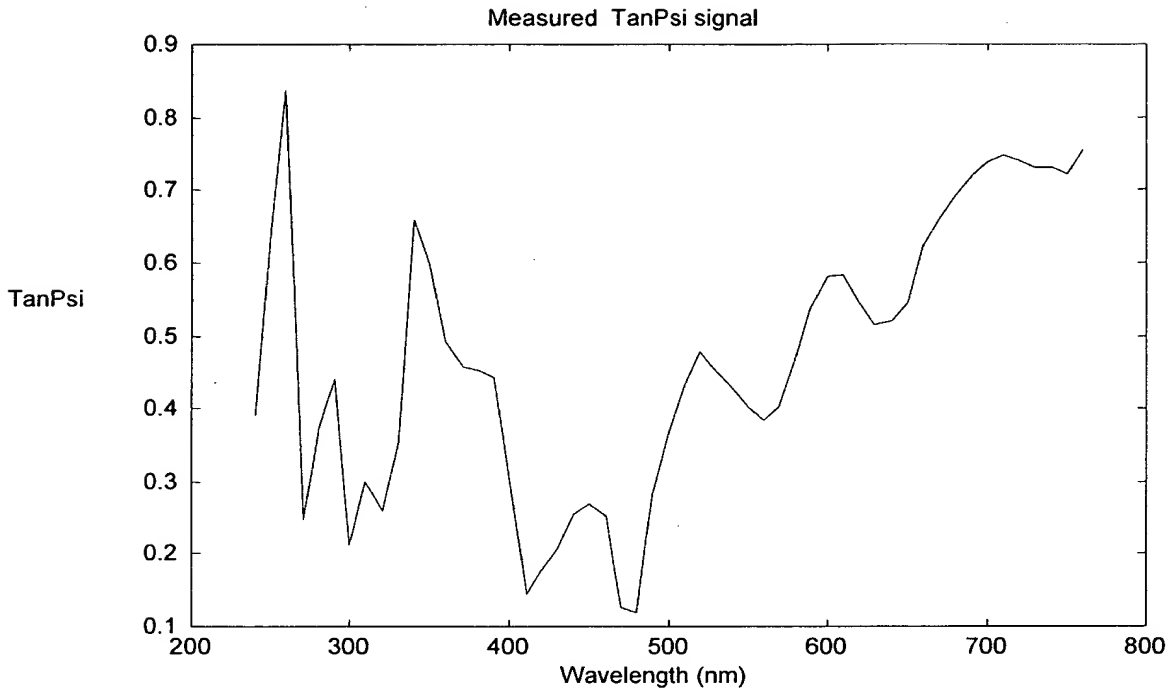


FIG. 17


Measured TanPsi signal
TanPsi
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
200
300
400
500
600
700
800
Wavelength (nm)

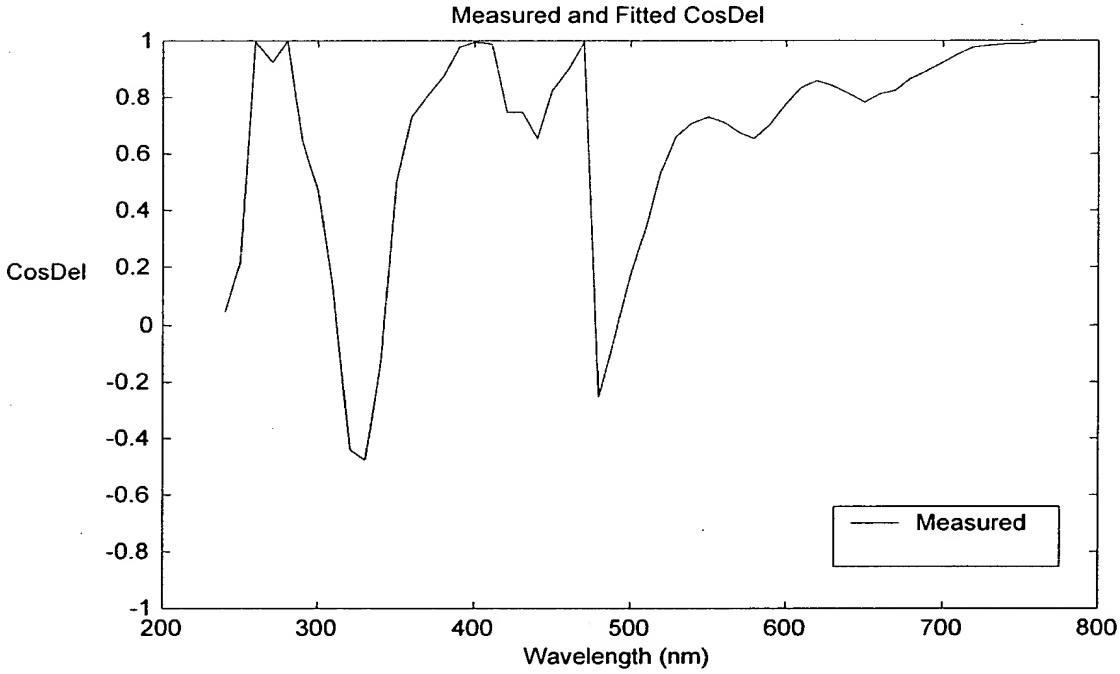

Measured and Fitted CosDel
CosDel
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
200
300
400
500
600
700
800
Wavelength (nm)
Measured

FIG. 18